



April 5, 2022

via electronic mail

Justin C. Poole  
Project Manager, Seabrook Station  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555-0001

**Re: Seabrook Station - Refueling Cavity Water Seal**

Dear Mr. Poole,

In C-10's review of the most recent NRC Integrated Inspection Report (05000443/2021004) dated February 10, 2022 we noted that the NRC identified a Green finding involving failure to properly evaluate structures potentially affected by Alkali-Silica-Reaction (ASR). The ASR degradation was identified and improperly evaluated in the reactor cavity pit area.

As you know, the reactor cavity pit area is a seismic category I concrete structure and is categorized as part of the containment internal structure (CIS). C-10 is concerned that the evaluation of ASR degradation in this area may non-conservatively neglect all potentially affected configurations.

For example, Seabrook is among the reactors that does not rely on an inflatable pneumatic seal to provide a leak-tight barrier when the reactor cavity is filled with water during refueling outage.

Table B-2 in NUREG/CR-4525, "Closeout of IR Bulletin 84-03: Refueling Cavity Water Seal," June 1990 (ML20055E683), indicated that Seabrook employs four concentric solid metal seals for its cavity seal. It is our understanding that this design has the advantage of being invulnerable to pneumatic seal deflation that prompted Bulletin 84-03. However, the design has the disadvantage of being more vulnerable to physical geometry changes, such as those caused by ASR degradation, impairing the fit-up during refueling.

As described in Section 6.2 of the Updated Final Safety Analysis Report for Seabrook (ML02323A121),

"A neutron shield consisting of borated concrete, and which is integral to the permanent reactor cavity seal ring, is installed around the reactor vessel refueling flange...". We contend that any concrete growth could deform the seal ring and impair its sealing function during refueling.

C-10 requests that NRC verify that NextEra's evaluation of ASR degradation in the reactor cavity pit area considers all potentially affected structures and explicitly addresses the potential impact on the refueling water cavity seal.

On March 9, 2022 we forwarded our additional concerns to Christopher Newport, Senior Resident Inspector at Seabrook Station.

We appreciate your assistance in ensuring that this critical matter is an integral part of NextEra's and the NRC's inspection requirements.

Sincerely,

*Patricia L. Skibbee*

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cc: Christopher W. Newport, Senior Resident Inspector